

Computers and Internet
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I confess: I am a pack rat. I save everything. The upside to this behavior is that I usually have at least one of whatever it is I need. The downsides are manifold, including a perpetual state of trying to find where I put that one of whatever I need, a loving and tolerant spouse with differing views, and most importantly, a severe lack of space in which to store it all.

The items consuming much of the space are books. Besides my magazines and paperbacks, there are the shelves of technical reference books and catalogs. So, when my loving and tolerant spouse Maria told me she did not love the clutter and was losing her tolerance for same, I decided it was time to do something. So, I recycled all the magazines, dropped all the paperbacks off at the library, weeded through my catalogs, and (sigh) brought a whole vanload of "junk" to the local Hamfest. We're now living on the happier side of packratting, I'm glad to report.

So (I can hear my editor asking), what does all this have to do with Ham Radio, or more specifically Computers & the Internet? Well, all Hams are pack rats, so I have that angle covered. What I want to discuss this month is the subject of Electronic Publications.

Saving Space

All those catalogs used to consume two whole shelves in a bookcase. Now they are reduced to a dozen and a half CD-ROMs, and just a half shelf of actual paper. A similar situation has occurred with my technical reference books, although not as dramatically successful. The older publications, like my college textbooks, just have to remain as they are, until I can locate an electronic equivalent. But many of my old standbys are now on CD-ROM, much to my ever loving and tolerant spouse's delight.

Other than the obvious savings in physical space, most of these electronic publications are much more convenient to use. The 'pages' don't tear or wear. The index is usually much more complete. Most of the text can be searched for a specific term, for when the Index fails. I can always print out a page, if I really need a hard copy. Some CDs include video clips. Best of all, most actually cost less than the paper versions.

ARRL Publications...

My nearly complete *QEX* collection was really taking up a lot of space. I'd leaf through them occasionally, looking for a piece of a circuit to solve a particular problem. I'm pleased to say that most of my collection is now recycled, possibly into the newspaper you read yesterday, and I have a very complete collection on CD-ROM. (In case you

never heard of it, QEX is a cool magazine published by the ARRL for builders and experimenters).

My 1991 hardcover *Handbook* had seen better days. Although my handwritten additions to the Index were useful, the pages were smudged with grease and solder flux, and a few pages had torn. My *Antenna Book* was in even worse shape. Both are now recycled to a young Ham on a tight budget, and my CD-ROM versions are serving me well. An added bonus with the electronic versions is the inclusion of software for filter design, all the PC Board template packages, design programs for Yagi antennas and antenna tuners, and more. Even my *Repeater Directory*, small as it was, has (almost) been replaced by *TravelPlus for Repeaters*. I say almost, because that tiny *Directory* is now a permanent part of my car.

And All The Others...

Aside from the ARRL, there are many other companies producing electronic publications aimed at the electronics and Amateur Radio markets. I have a copy of the Tucson Amateur Packet Radio *Software CD* from 1998, which includes loads of software and data from their archives. My copy of the *APRS Maps* collection published in 1996 by the Sproul brothers, Mark KB2ICI and Keith WU2Z, is still around. I still use Chicago Map Corporation's *Precision Mapping* program to help me get from here to there. (The TravelPlus CD also comes in handy here.)

Even the service manual for my old Mercedes is available on CD-ROM. I bought it for under \$100, a fraction of the cost for the paper versions. Not only am I certain that it is complete - no missing pages - but I can print whatever I want, and let *those* pages get dirty.

Catalogs

Nearly every electronic component manufacturer offers their latest catalogs on CD-ROM. For you and me, the biggest advantages are the searchability and small physical size of the catalogs. For the manufacturers and distributors, the advantage is the very low cost to reproduce and distribute these 'catalogs'. I'll bet that the paper Digi-Key catalog - well over 1/2" thick - costs a lot more than the approximately US\$2 the CD version costs to reproduce and mail. I use it frequently, since my on-line connection is relatively slow. I also my Newark and Maxim catalogs frequently.

On-line

If you surf the Internet over to nearly any of the manufacturers, you can access their full-line catalogs on line. Some will even let you download them - those that don't would be happy to send a CD version to you. An example of the downloadable type is NTE

Electronics. They are a major distributor of replacement semiconductors. They charge a nominal fee for a copy of their catalog, just a few dollars, but you can download it for free off their web site. I use their software often, since their main office (which has *everything* in stock) is only a few minutes from home, much faster than mail-order.

Even if you can't (or don't want to) download it or get a CD version, a visit to their web site will help you select the parts you need. For example, my older brother Philip coaches high school Track, and wanted a billboard type electronic stopwatch for practice sessions. A quick search of the Internet yielded plenty of clock circuits on a single chip, but none with LED drivers. It took some careful searching, but I eventually found an obsolete chip that did what I needed, and a distributor who had a few in stock.

The point is, had I been limited to the catalogs I had on hand, and my local distributors, I'd have had to build a stopwatch circuit from discrete TTL chips - probably a dozen of them. With some perseverance and a little luck, I have a two-chip solution.

Acrobat

While some publications come with their own viewer, the majority of them use the Acrobat viewer by Adobe. This Portable Document Format (.PDF) viewer is available for nearly every operating system and hardware combination there is, free for the downloading. Many publication CDs include a copy of the Acrobat viewer, or you can download it from Adobe directly, assuming you don't have it already.

The PDF format is as good as it gets in the electronic publishing field today. The viewer is free and widely available. The encoded documents are compact. Documents print out exactly the way the publisher intended. Graphics and text are printed to the limits of the printer's capabilities, so output always looks as good as possible. Navigation through .PDF file pages is easy to learn and master. The encoder is not outrageously expensive, and it is very easy to use. Documents can even be password protected, to prevent changes, printing, or unauthorized viewing. (Take the security features with a grain of salt - they can be broken easily enough).

I have a licensed copy of the encoding program, Adobe Acrobat 3.0, which I bought new at a computer show for about US\$30. The latest and greatest version - Acrobat 5.0 - is available from Adobe for US\$249 (upgrade US\$99). In addition to allowing you to encode documents from virtually any application that can print, Acrobat allows you to edit .PDF documents, select text and graphics, and more.

Your Club Goes Electronic

Recently Tucson Amateur Packet Radio (TAPR) changed from a quarterly newsletter (the *Packet Status Register*) printed on paper to one delivered electronically, as a .PDF file.

The first issue was laid out and delivered in the exact same fashion as it would have been for printing - that is, in Black & White, and with a two-column layout. The second edition was optimized for on-line reading, with a single-column layout, and all the photos are in color.

Can your club's newsletter be moved to an electronic format? If you produce it on a computer, the answer is yes. I can't imagine that anyone still types and pastes up newsletters by hand, but you never know. The second consideration is how many of your members have computers. You'll need at least a majority to have a computer to make electronic publishing viable.

To get started, find someone with access to a copy of Acrobat (the whole program, not just the Reader) and convert a recent newsletter into a .PDF file. Hand it out at a meeting, and have folks say what they think at the next meeting. Most any newsletter will fit on a floppy. As an example, the Winter 2002 TAPR Packet Status Register has about a dozen photos and is 23 pages long, with a .PDF file size of 410 kB. Alternatives to floppy distribution include posting the document on a web site for downloading and burning CD-ROMs, which have a much greater capacity than a floppy.

The economics of electronic publishing should become readily apparent: Simply compare what it costs now to reproduce and distribute your newsletter to what it would cost for a floppy disk (15 cents?) plus postage (a floppy can be mailed for as little as 34 cents). Note that the weight of the floppy doesn't increase if you put more information on it. Costs for web distribution are nearly zero, while CD-ROM costs are a little bit higher than those for floppies.

The final step, after everyone agrees, is to buy a copy of Acrobat. As I mentioned above, you don't necessarily need to drain the treasury for the very latest and greatest version, but avoid versions prior to 3.0. Good luck, and don't forget to send me a copy!

That's all the space we have this month. Next September, I want to offer a (necessarily brief) introduction to programming. We have these incredibly powerful computers at our disposal, and we're limited to using them for what others have written software for them to do. While there's no way I can teach you how to program in a few thousand words, I can at least show you some of the possibilities and how you can bring yourself to the next level. Until then, 73, Don, N2IRZ.

Figure 1: Books take up a lot more space than CDs. All of these books, and quite a few more which wouldn't fit in the photo, have been replaced by their respective electronic versions, shown at lower left.

